

**SEMI-PHYSICAL MODELING OF HEMT DC-TO-HIGH FREQUENCY
ELECTROTHERMAL CHARACTERISTICS**

ABSTRACT OF THE DISCLOSURE

A method for modeling semiconductors which utilizes a semiphysical device model coupled with an analytical thermal resistance model to self consistently solve for the channel temperature and internal charge/electric field structure of the semiconductor device. As such the method in accordance with the present invention realistically simulates the response of electrical performance to temperature and vice versa.

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